

CLAIMS

1. A Coriolis flowmeter comprising:

a measurement flow tube including first and second curved tube portions, the first curved tube portion having a first inlet portion through which a measurement fluid flows in and a first outlet portion through which the measurement fluid flows out, the second curved tube portion having a second inlet portion through which the measurement fluid flows in and a second outlet portion through which the measurement fluid flows out; and

a fixing member which is situated in a middle position of the flow tube as seen in plan view and to which the first inlet portion, the second inlet portion, the first outlet portion, and the second outlet portion are fixed,

the Coriolis flowmeter being used to obtain at least one of a mass flow rate and a density of the measurement fluid through detection of at least one of a phase difference and a vibration frequency proportional to the Coriolis forces acting on the first and second curved tube portions by vibrating the first and second curved tube portions with the first and second curved tube portions being opposed to each other,

wherein, the first inlet portion, the second inlet portion, the first outlet portion, and the second outlet portion are fixed to the fixing member such that: their tube axes are arranged in the same plane, the first inlet portion and the second inlet portion

being arranged in a non-parallel state such that a distance therebetween increases with increasing departure from the fixing member; and that the first outlet portion and the second outlet portion are arranged in a non-parallel state such that a distance therebetween increases with increasing departure from the fixing member, the first and second inlet portions and the first and second outlet portions being fixed so as to be arranged symmetrically, and

wherein a distance between respective driven portions of the first and second curved tube portions is smaller than a distance between respective portions thereof continuous with the driven portions.

2. A Coriolis flowmeter comprising:

a measurement flow tube including first and second curved tube portions, the first curved tube portion having a first inlet portion through which a measurement fluid flows in and a first outlet portion through which the measurement fluid flows out, the second curved tube portion having a second inlet portion through which the measurement fluid flows in and a second outlet portion through which the measurement fluid flows out;

a fixing member which is situated in a middle position of the flow tube as seen in plan view and to which the first inlet portion, the second inlet portion, the first outlet portion, and the second

outlet portion are fixed; and

a connecting tube portion provided between the first outlet portion and the second inlet portion and connecting the first outlet portion and the second inlet portion to each other,

the Coriolis flowmeter being used to obtain at least one of a mass flow rate and a density of the measurement fluid through detection of at least one of a phase difference and a vibration frequency proportional to the Coriolis forces acting on the first and second curved tube portions by vibrating the first and second curved tube portions with the first and second curved tube portions being opposed to each other,

wherein the first inlet portion, the second inlet portion, the first outlet portion, and the second outlet portion are fixed to the fixing member such that: the first inlet portion and the second inlet portion are arranged in a non-parallel state such that a distance therebetween increases with increasing departure from the fixing member; and that the first outlet portion and the second outlet portion are arranged in a non-parallel state such that a distance therebetween increases with increasing departure from the fixing member, the first and second inlet portions and the first and second outlet portions being arranged symmetrically,

wherein the first outlet portion, the second inlet portion, and the connecting tube portion are arranged such that their tube axes are in a straight line, and

wherein a distance between respective driven portions of the first and second curved tube portions is smaller than a distance between respective portions thereof continuous with the driven portions.

3. A Coriolis flowmeter according to Claim 1 or 2, wherein the portions continuous with the driven portion of the first curved tube portion and the first inlet portion and the first outlet portion are arranged in parallel to each other, and the portions continuous with the driven portion of the second curved tube portion and the second inlet portion and the second outlet portion are arranged in parallel to each other.

4. A Coriolis flowmeter according to one of Claims 1 through 3, wherein the fixing member is formed substantially in one of a circular configuration and an arcuate configuration in plan view.

5. A Coriolis flowmeter according to Claim 4, wherein the fixing member is formed in a wall-like configuration.